

REMARKS

This responds to the Office Action mailed on June 15, 2006.

Claims 1, 3, 7, 8, 9, and 14 are amended, and no claims are cancelled or added; as a result, claims 1-16 remain pending in this application.

§102 Rejection of the Claims

Claims 1-10 and 12-16 were rejected under 35 USC § 102(a) as being anticipated by Redl et al. (U.S. 6,064,187).

Claims 1-5, 7-10, and 13-16 were rejected under 35 USC § 102(a) as being anticipated by Rincon-Mora et al. (U.S. 6,188,211).

Redl discusses a voltage regulator using a current sensor 64, a voltage reference and voltage output error amplifier 59, and a sensing circuit 78 with comparator 76 to sustain voltage output of a voltage regulator under varying current loads. Redl further describes in the cited portion (col. 10, ln. 65 – col. 11, ln. 15) operation of the circuit under varying current conditions, but fails to consider providing a minimum operating voltage when the current drawn is at a minimum but nonzero load current level. Figures 10a and 10b of Redl and the accompanying description illustrate a transition from one operating voltage level to another, but fails to teach that the lower current level of Fig. 10a (approximately .56A) is a minimum operating load current level. That is, Redl does not teach that the load circuit does not draw less than the minimum operating load current in operation, and a further reduction in load current may result in a further increase in output voltage as shown in Fig 10b.

More specifically, the claims as amended reflect that the output voltage remains at the maximum operating voltage level if the current drawn is less than the minimum operating load current, while Redl fails to teach such a limitation. This difference between Redl and the pending claims is further explained by Figure 3, which shows at 301 that the output voltage varies continuously as the output current ranges between no current and a maximum current, while the example embodiment of the invention shown at 302 illustrates that the output voltage remains at the maximum operating voltage level if the current drawn is equal to or less than the minimum operating load current, where the minimum operating load current is greater than zero

current. This limitation is recited in each of the pending independent claims as amended, clearly distinguishing them from Redl.

Rincon-Mora senses an output voltage of a voltage regulator 10 via a voltage divider network made up of high-resistance resistors 40 and 42. It further uses a voltage feedback network to regulate the output voltage based on the sensed output voltage from the voltage divider network. Rincon-Mora shows in Figures 2a and 2b and describes in the cited col. 6, ln. 36-44 that an increase in current results in a reduction in output voltage and a decrease in current results in an increase in output voltage, but does not teach that the output voltage remains at the maximum operating voltage level if the current drawn is equal to or less than the minimum operating load current, where the minimum operating load current is greater than zero current. In short, Rincon-Mora again describes a system such as that illustrated by curve 301 of Figure 3 in the pending application, while the claims reflect the example embodiment of a nonlinear response curve shown at 302.

Because the pending claims as amended each clearly recite that the output voltage remains at the maximum operating voltage level if the current drawn is equal to or less than the minimum operating load current, where the minimum operating load current is greater than zero current, the pending claims have been shown to be distinct from the cited art. Reexamination and allowance of these pending claims 1-10 and 12-16, and claim 9's dependent claim 11, is therefore respectfully requested.

§103 Rejection of the Claims

Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over Redl et al. (U.S. 6,064,187) in view of Covington et al. (U.S. 6,031,749).

Claim 11 depends from claim 9, and is believed to be in condition for allowance as it incorporates the limitations of claim 9, which has been shown to be allowable over the cited art above. Reexamination and allowance of claim 11 is therefore respectfully requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 349-9581) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

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By



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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 16th day of October 2006.

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Signature

